Municipal Water-Efficiency Program

Location: City of Fortaleza, State of Ceara
Type: Water- and energy-efficiency improvements
Size: 22,000,000 m^3
Funding: Total: US$385,000
Private: US$115,000
Public: US$270,000
Objective: To increase water utility efficiency.
Duration: 2000–2003
Scale: Urban and rural

Summary

Inadequate or outdated water delivery systems create reliability problems and high energy demands. This project is helping promote energy efficiency, and thereby expanding and improving water service to end users. Energy costs are reduced and water use efficiency is increased through comprehensive energy management strategies for water utilities.

In-Country Principles That Attracted Nondonor Financing

- Capacity building and informed decision making
- Institution building and access to justice and enforcement of laws
- Public access in support of sustainable development and public participation, coordination, and partnerships

The key to private-sector interest in this project has been political support for reform from the state government and governor. Also key has been allowing utilities to operate under standard commercial practices, for example, by hiring and developing staff with appropriate skills matched to the job, improving cost recovery, setting up metering systems, installing management information systems, and keeping financial records in line with international accounting standards.

Increased awareness, knowledge, and skills of sector professionals in technical areas, the existence of a legal and regulatory framework that includes tariffs, and increased public knowledge of, and participation in, energy decision making have also been important. The project includes a water- and energy-efficiency public outreach campaign.

Other in-place principles helping to attract private-sector interest include effective coordination among sectors, between public and private sectors, and across multiple geographic and institutional scales; an emphasis on decision making and assignment of authority at the lowest appropriate level; consideration of water as an economic, social, and environmental good, including acknowledgment of the full costs of water management and water services; and conditions and mechanisms of access to capital at all levels.

Financing

Total investment to date has been US$385,000. The municipal water authority, Companhia de Água e Esgoto do Ceará (CAGECE) provided US$100,000 of in-kind contributions (staff time and event costs). Private-sector groups contributed about US$15,000 of training, in addition to travel expenses.

The United States Agency for International Development (USAID) contributed US$250,000, and the US Department of Energy (USDOE) provided US$20,000.

Additional funding of US$1,600,000 for further efficiency investments is expected to come from a loan from the World Bank and Programa Nacional de Conservacäo de Énergia Eléctrica (PROCEL) and guaranteed by the local, privately held electric utility. PROCEL is the Brazilian national electricity conservation program, an organization that funds or cofunds private- and public-sector conservation projects.

The Project

As water needs grow and supplies become scarcer, costs for water-service-related energy use become more difficult for municipalities to afford. Problems such as inadequate or

antiquated infrastructure and limited or irregular supply impede the efficient delivery of water to end users. Water delivery is a relatively energy-intensive municipal service, and energy efficiency can help municipalities reduce the costs associated with water services while improving the capacity and reliability of the delivery system.

The city of Fortaleza, aided by the Alliance to Save Energy, is developing a comprehensive energy management strategy for its municipal water system. Specific activities include assessing the potential for energy and water savings, mobilizing community-wide resources to participate in the development and implementation process of a comprehensive water management strategy, and developing and implementing the strategy.

The project has expanded and improved water service to end users at lower costs. It has also given water utilities the ability to manage energy use in the midst of an energy crisis and rationing, and has increased management's understanding of energy use as a nonfixed cost. Commercial, industrial, and residential sectors are benefiting through access to safer, cheaper, and more reliable water services.

Technical Data

Technologies include variable-speed motors, high-efficiency pumps, and supervisory control and data acquisition (SCADA) systems.

Performance Data

Between 2000 and 2001, US$181,000 worth of energy savings resulted from efficiency improvements. Sixty internal utility staff and 100 external staff have been trained in energy management strategies. The population served by the water utility has increased.

Participants and Roles

CAGECE provides in-kind support, and USAID and USDOE provide financial support through the Alliance to Save Energy. Other existing and potential participants include PROCEL and the World Bank.

Partner Contacts

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